

described occurring in the Anatidae. The tumour is a typical ovarian carcinoma of the granulosa-cell type which showed extensive peritoneal metastasis. A healthy duck of this species and age would weigh approximately 1100 grms. based on its linear measurements (Beer, unpublished data), thus indicating a significant degree of malignant cachexia which undoubtedly resulted in death.

Summary

A malignant ovarian tumour of granulosa-cell type is reported occurring in an adult female Mallard. Comparison is made with the occurrence of tumours in the chicken and in other birds both captive and wild.

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Further breeding records from Northern Rhodesia (No. 2)

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INTRODUCTION

The present paper is a corollary to that by Benson and Pitman (1958-59). As previously, data are only included for those species for which they are scanty or lacking in Benson and White's Check List (1957). Eggs recorded as collected are in the British Museum, unless otherwise indicated, while any parents or young birds so recorded are in the National Museum, Bulawayo. Co-ordinates are given for any locality, the position of which is not indicated in the Check List. The nomenclature of that work is followed. We are most grateful to the various persons whose names are mentioned below, in the appropriate context, for information and/or specimens.

SYSTEMATIC LIST

Ixobrychus minutus payesii (Hartlaub).

Coll. nestling, 23rd April, 1960, Chilanga, caught locally, brought to C. W. B. It is in pale rufous buff down, except for a few dark brown feathers margined with rufous starting to appear on the mantle and wing-coverts. The outer toe is slightly shorter than the inner toe, as is characteristic of the Botaurinae (Bock, *Amer. Mus. Novit.*, 1779, 1956: 12).

Ciconia nigra (Linné).

B. L. Mitchell observed a young bird in the sandstone gorges, on the north side of the Zambesi, below the Victoria Falls, at 26° 40' E., on 20th July, 1959. It was able to fly weakly, but allowed approach to within 30 feet, and could not have been more than about two months old.

Anastomus lamelligerus lamelligerus Temminck.

W. D. C. Brickhill observed a colony of over 100 nests, in reeds bordering a small lake in the Bangweulu Swamps, in July, 1958. The nests were flimsy platforms made of sticks and grass. Some contained eggs, others very small young.

According to T. Keynes, there was a colony of hundreds of nests in reeds near the Machili/Zambesi Confluence, in May, 1959, some containing eggs, others recently hatched young. By the end of June the young that had survived had flown, though in the meantime heavy toll had been taken of them by local Africans.

Bostrychia hagedashia brevirostris (Reichenow).

V. J. Barnett found a nest near Livingstone, on the Zambesi above the Victoria Falls, on 21st November, 1959. It was a platform of diameter not more than 15 inches, made of sticks, in a tree overhanging the river, about 10 feet above water-level. It contained one chick covered in fine black down, considered to be about four days old, and one egg.

N. J. Carr and J. M. C. Uys found a nest on the Kafue at 14° 38' S., 26° 11' E., on 15th January, 1960. It was a frail, thin platform, of diameter only about eight inches, made of fine twigs, without any lining, in a *Syzygium guineense* tree overhanging the river, and about four feet above water-level. It contained two chicks, in dull black down, with a little white tipping on the throat, and some feathers starting to emerge from sheath in the area of the wings.

Neophron monachus pileatus (Burchell).

Mitchell found a nest containing a single chick about two weeks old, in the Kalomo District at about 17° S., 26° E., on 20th August, 1959. The nest was about 15 feet up in a small Acacia tree, on an unburnt open plain. Pellets found in the vicinity contained hooves of a newly born calf both of a Common Duiker (*Sylvicapra grimmia*) and a Sharpe's Grysbok (*Raphicerus sharpei*), and the false hoof of a Reedbuck (*Redunca arundinum*), the hairs of all three of these species, and the remains of two rats.

B. Donnelly and C. W. B. found a nest containing a single chick, at the Ngambwe Rapids, on the Zambesi, on 27th August, 1959. The nest was 35 feet above the ground, in riparian forest. The chick was still completely in brown down, about seven inches in length, and adjudged to be one week old.

Elanus caeruleus caeruleus (Desfontaines).

Coll C/3 fresh, 3rd June, 1959, edge of Kafue Flats, on Lochinvar Ranch (Mitchell). Eggs dull surfaced, white, thickly smeared all over with burnt umber and/or permanent brown, on a few obscured greyish blotches; size 38.0 x 30.5, 37.0 x 31.0, 41.0 x 30.3 mm. Nest five feet up, in a sapling of *Acacia sieberiana*.

Mitchell also saw a nest near Livingstone on 21st June, 1959, 35 feet up in an *Acacia albida* tree. There were two young, barely fledged, on the edge of the nest, while one of the parents was at the top of the tree, plucking fur from a rat, apparently a *Mastomys natalensis*.

Accipiter melanoleucus melanoleucus Smith.

Coll. nestling, 2nd October, 1960, Fort Jameson (V. J. Wilson). This specimen was taken from its nest in the top of a *Brachystegia manga* tree, when almost fully fledged, its one companion managing to fly away. It was kept in captivity until 4th February, 1961, when it died. It is still completely in immature plumage. Another such specimen has been examined by C. W. B., shot by C. S. Holliday at Livingstone on 25th March, 1960, in the Rhodes-Livingstone Museum.

Circus aeruginosus ranivorus (Daudin).

Coll. C/3 fresh with female parent (with no more eggs to lay), 5th March, 1961, Choma District at 16° 39' S., 27° 01' E. (W. F. Bruce-Miller). The nest was in a swamp, one foot above water-level, a platform of coarse grass and reeds, with finer grass on top. Eggs white, smooth without gloss, nest-stained, green inside; size 46.8 x 36.3, 45.3 x 34.9, 48.6 x 36.3 mm. On 3rd March there were only two.

C. W. B. saw a pair copulating in a low bush on the edge of a swamp near Kalomo on 8th January, 1958. Later the same day, one of the pair was flushed from a half-completed nest.

Actophilornis africanus (Gmelin).

There are definite egg-laying records in the Check List for February, May, June and December. Recent records, details of which it is unnecessary to give, indicate egg-laying in the following months:— January, one record; February, one; March, two; April, one; July, one; August, one; November, one. It is evident that this species has no marked breeding season, and this is supported by Nyasaland records (see Benson's check list, 1953), while R. K. Brooke has provided the following up-to-date information for Southern Rhodesia:— January, four records; February, four; March, six; April, one; May, nil; June, one; July, nil; August, six; September, one; October, one; November, six; December, four.

Microparra capensis (Smith).

C. W. B., in the Busanga Swamp (not Busango, as spelt in the Check List), 24th June, 1960, observed an adult accompanied by three young not more than three-quarters of its size. It may be assumed that they were from eggs laid in early May.

Charadrius tricollaris tricollaris Vieillot.

Coll. C/2 fresh, 17th June, 1960, Chilanga (C. W. B.). The first egg was laid on 13th June, and presumably this was a full clutch. They are smooth and dull surfaced, pale cream, much obscured by short fine lines and

confluent smears of sepia, concentrated in a small cap at the top, in a 5 mm. broad zone near the top, and in another slightly broader zone towards the middle of each egg, on almost obscured light grey, mainly in an underlying girdle around the top; size 29.1 x 22.0, 29.2 x 22.3 mm. They are in fact typical of this species, and see Serle (*Bull. Brit. Orn. Cl.*, 76, 1956: 79).

Additional breeding records are as follows:— C/2, 22nd September, 1953, Lukusuzi Game Reserve (R. I. G. Attwell); single young birds only about four days old, 28th and 29th August, 1957, in separate localities near Chilanga (C. W. B.); two separate C/2, 6th and 11th September, 1958, Mwekera, near Kitwe (G. Bell-Cross); C/2, 20th September, 1960, Nsefu (C. J. Vernon).

Gallinago nigripennis angolensis Bocage.

Coll. two C/2, 8th June and 11th June, 1944, Ndola, both with female parents, one egg of first clutch fully shelled but not yet laid, second clutch partly incubated (E. L. Button). The parents have culmen (exposed) 96, 95 mm. respectively. The eggs of the first clutch are pyriform, smooth, with slight gloss, light warm sepia, boldly spotted and blotched warm sepia and raw umber—in one egg a broad girdle around the top—on underlying dull grey and light brownish grey; size 40.8 x 30.4, 40.4 x 30.0 mm. Those of the second clutch are more ovate than pyriform, and narrowing at one end, light stone-brown, very boldly marked, mainly around the larger end, with large twisted confluent blotches and spots of shades of warm sepia, on underlying light grey and pale brownish grey, on one of the eggs also bold markings of raw umber; size 41.3 x 30.5, 42.3 x 30.5 mm.

Benson (1959) records a C/2 from the Kafue Flats, and (*Ann. Trans. Mus.*, 21 (2), 1949: 164) a C/1 from northern Nyasaland, both being complete clutches.

Burhinus capensis capensis (Lichtenstein).

Attwell found a clutch of two eggs on 25th September, 1960, at Kafwala (14° 50' S., 26° 10' E.), in short grass by the edge of a motor-track through *Brachystegia* woodland. By 6th October one egg had hatched, and twenty-four hours later both had. Uys observed two chicks, still mainly in down, but with wing-feathers just starting to emerge from sheath, on 9th October, 1960, at Ntemwa (14° 22' S., 26° 02' E.) on recently burnt bare ground, on the edge of *Brachystegia* woodland. Mitchell saw two chicks still completely in down, not more than a week old, on 6th November, 1960, at Moshi (14° 24' S., 26° 10' E.), in *Brachystegia* woodland, on ground over which a fierce fire had raged only the previous night. They were quite unharmed, and the question poses itself as to how they had survived.

Larus cirrocephalus Vieillot.

Coll. C/3 fresh, 4th August, 1960, near Ncheta Island, Bangweulu Swamps (Brickhill). Eggs on a pad of grass on a pile of excavated material by an artificial channel 40 feet wide, one foot above the water-level, and no other nests in the vicinity. One egg was broken and thrown away. Of the other two, both are smooth surfaced, with very slight gloss. One is pale olive-green, sparingly and irregularly marked with raw umber all over, on underlying violet-grey. The other is pale *terre verte*, boldly and very sparingly blotched, mainly at the top of the large end, with sepia and light

warm sepia, on underlying pale grey. Size 54.0 x 37.3, 54.2 x 36.3 mm.

E. A. Zaloumis had a young bird brought to him on the Zambesi 12 miles downstream from Mwandu, in July, 1959. It still had some down adhering, and was only able to fly very weakly.

Pterocles gutturalis gutturalis Smith.

Coll. fully shelled oviduct egg, with both parents, 11th August, 1960, Munte Plain, 14° 00' S., 25° 30' E. (W. F. H. Ansell). The egg is smooth and fairly glossy, light brown, sparingly spotted and speckled light umber, more thickly at the top of the large end, and with a 'girdled' appearance, on underlying violet-slate, also mainly in a zone around the top; size approximately 43.5 x 33.3 mm. It closely resembles eggs of this species from Oldeani, Tanganyika. The female also contained an oocyte of diameter 24 mm.

The stomach-contents of the parents consisted of seeds only, among which A. Angus, Plant Pathologist, Department of Agriculture, Northern Rhodesia, has identified the following after germination:— legumes, *Sesbania* sp. (trace only), *Crotolaria* sp. and *Cassia* sp.; weed, *Achyranthes aspera* (trace only); grasses, *Leersia hexandra* and *Rottboelia exaltata* (traces only of both); blackjack, *Bidens* sp.

Records by Benson (1959, 1960, and *Occ. Papers Nat. Mus. S. Rhod.*, 3 [24B], 1960: 245) indicate egg-laying during June/October. To these may be added the following:— Kafue Flats, 12th June, 1955, nest with three eggs (Lt.-Col. R. A. Critchley); 17th September, 1957, two young not yet able to fly, less than half the size of their parents (Uys); Moshi (14° 24' S., 26° 10' E.), 8th September, 1960, three very small chicks, only a few days old, of which by 4th October only one survived, by then about half the size of its parents, but able to fly (Attwell & Uys).

W. F. Bruce-Miller states that on his farm near Choma the odd individual may be seen at any season. But it is mostly in evidence in November, when flocks of 50 or more may be seen flying southward at a height of up to 1,000 feet, in the heat of the day, calling continuously. Occasionally a few individuals will descend to drink at his dam, and then move on south again. See also Benson (1959), re its presence on the Kafue Flats only from late April to October. G. C. R. Clay, who has many years experience in Barotseland, has seen it only the once there, near Kalabo, during the dry season, and cannot credit that it occurs on the Barotse Plain in the rains, as recorded in the Check List, since practically the whole of the plain is then under several feet of water. It would appear that it is no more than a straggler to Barotseland, and we are unaware of any records from Angola.

Pterocles bicinctus bicinctus Temminck.

Coll. C/3 dead fresh, with female parent, wing 167 mm., 26th July, 1960, in stony, hilly Brachsytegia woodland, 15 miles north-east of Livingstone (V. J. Barnett). One egg was broken. The other two, which have been returned to the collector, are smooth and slightly glossed, pale pinkish brown, finely speckled all over, one very sparingly, with light raw umber, on underlying rather bolder markings of light violet-grey in one, even bolder of pale grey in the other; size 37.3 x 26.4, 38.5 x 26.3 mm. They are not unlike eggs of *P. quadricinctus* collected by C. R. S. P. near the Kerio River, to the south of Lake Rudolf.

P. S. Morris saw a pair in the Luangwa Valley (Petauke District) on 16th September, 1960, with three chicks still quite unable to fly.

Chrysococcyx caprius (Boddaert).

A fledgling, the tail of which was sent to C. W. B. for identification, was shot by L. R. Evans at Serenje on 23rd March, 1958, while being fed by an *Oriolus larvatus*.

Tauraco corythaix schalowi (Reichenow).

C. W. B. observed a bird incubating a single egg near Chilanga on 8th December, 1957. The nest was near the top of a Bauhinia tree 15 feet high. Another nest was observed in this locality between 15th and 23rd January, 1960, when two eggs were being incubated. It was in a mango tree, 15 feet above the ground. T. C. L. Symmes observed a nest near Lusaka between 9th and 17th January, 1960. This also contained two eggs, and was in a Bauhinia tree, 12 feet above the ground. Mrs. H. Tait saw a nest containing two well feathered young at Isoka on 1st February, 1961.

Musophaga rossae Gould.

C. J. Vernon found a nest at Kasama on 14th September, 1958. It was a large dove-like platform of sticks on the edge of a patch of evergreen forest, 12 feet above the ground. It contained one egg, and on the 18th two. On 6th October one egg was chipping open, and the following day both were doing so. The eggs were pale cream in colour.

It is appropriate to expand the record of egg-laying at Kalulushi in October by L. L. Muir, summarised in the Check List. A nest was found by him in dense riparian forest, 10 feet above the ground, on 22nd October, 1955. It was a fair sized platform of sticks and twigs. It contained two white eggs, approximate size 41 x 38 mm.

Tockus erythrorhynchus rufirostris (Sundevall).

In the Luangwa Valley at 12° 30' S., 32° 20' E., on 26th March, 1958, Attwell watched a male bringing food (mostly orthopteran) throughout the day to a nesting hole in a tree of *Colophospermum mopane*, nine feet above the ground. The open part of the hole consisted of a slit measuring $1\frac{3}{4}$ inches vertically and $\frac{3}{8}$ inch wide. The slit was mudded all round for about one inch. Unfortunately, when the site was re-visited two weeks later, it was found that the tree had been destroyed by elephants.

Scotopelia peli Bonaparte.

T. Edelman observed a bird at its nest, a shallow platform of sticks containing one egg, on the edge of the Kariba Lake, 25th February, 1959. The nest was only five feet above the level of the rising flood, and would shortly have been inundated.

Apus caffer streubelii (Hartlaub).

Coll. nestling, 30th December, 1959, Chilanga (C. W. B.). This specimen is fully feathered, and has wing 115 mm. It was found on the floor of the verandah of M. A. E. Mortimer's house, after the nest (an old one of *Hirundo abyssinica*) had disintegrated. A broken fresh egg had been found below the nest on 3rd October, while twittering from the interior of the nest was first heard on 29th November. A pair of adults had been around the house regularly since the previous February.

R. M. Cary (communicated by J. M. Winterbottom) found an old nest of *Hirundo abyssinica*, containing three eggs of this swift—C/2 is usual—near the Kafue Bridge (Lusaka District) on 30th November, 1949.

Motacilla clara torrentium Ticehurst.

A. J. Tree found a fresh completed nest, in which no eggs had yet been laid, on the Kawanga River, at 15° 42' S., 28° 36' E., on the Zambesi scarp, on 30th August, 1960. It was on a small ledge, under an overhang of rock, four feet above water-level. He found another nest in this locality on 27th September, 1960, containing two eggs. It was placed behind a protruding root, on a bank three feet high, two feet above water-level.

E. L. Button collected an immature specimen, still under parental care, tail 68 mm. only, on the Kabompo River at 11° 53' S., on 10th November, 1960. C. W. B. has compared it with specimens from Southern Rhodesia and eastern Northern Rhodesia, lent by M. P. Stuart Irwin from the National Museum, Bulawayo. It is darker above than the great majority, and may be better placed with *M. c. chapini* Amadon (*Amer. Mus. Novit.*, 1656, 1954: 4). The only other records of this species from the North-Western Province are from G. Bell-Cross, who saw one on the Kabompo at 12° 04' S., on 27th July, 1960, while White has seen it at Mwinilunga.

Benson (*Occ. Papers Nat. Mus. S. Rhod.*, 3[24B], 1960: 347) records gonad-activity in a pair collected in the Mazabuka District in September (eastern co-ordinate shown incorrectly as 26° 08' E., instead of 28° 08' E.). The only record in the Check List is of egg-laying in October. All records point to dry season breeding, and it might be supposed that breeding in the rains, with the danger of nests being flooded out by rivers or streams in spate, would be avoided. However, there is a Nyasaland record of egg-laying in March, as well as in August/October (Benson's Check List, 1953). R. K. Brooke has provided the following up-to-date egg-laying records for Southern Rhodesia:— August, one record; September, two; October, one; November, two. The last two are from the very humid Melsetter area, and can certainly be taken as wet-season records. Moreover, Moreau (*Fest. Stres.*, 1949: 183) states that in the Usambara Mts. nesting takes place at any time of the year, and that the "long rains" of April and May are not avoided.

Chlorocichla flaviventris occidentalis Sharpe.

Coll. C/2 fresh, 8th November, 1960, Lusaka District at 15° 40' S., 28° 37' E. (C. W. B.). Nest on edge of riparian forest, eight feet above the ground. Eggs white, smooth, with slight gloss, with a marbled appearance, very boldly blotched all over with concentrations (confluent at large end) of warm sepia shades, with light and pale raw umber fine streaking and speckling, on underlying light and pale grey, mainly at the large end; size 24.6 x 17.0, 25.2 x 17.2 mm.

Muscicapa boehmi (Reichenow).

At Isoka, 2nd November, 1960, Mrs. Tait saw young being fed in an old nest of *Anaplectes melanotis*. A week later, they had apparently left, but on 12th December young were again being fed in the same nest, and on 28th December three fledglings under parental care were seen nearby.

Turdus olivaceus stormsi Hartlaub.

Coll. C/2 fresh, with female parent (with no more eggs to lay), 20th

September, 1960, Luella River at 11° 57' S., 28° 52' E. Nest a cup made of rootlets and tendrils, up to 2 mm. thick on the outside, less than 1 mm. on the inside. There was much dried mud at the base and in the walls. Dimensions: external diameter 140, internal 85 mm.; external depth 95, internal 50 mm. Nest 15 feet above the ground in the lateral fork of a tree, in thick riparian forest. Eggs smooth, with slight gloss, pale caerulean blue, one tinged greenish. The blue egg is very scantily marked with a few small spots and specks of raw umber and some small paler smears. The other egg is sparingly spotted all over with pale burnt umber, with a zone of bolder markings around the top, on underlying very sparse spots of pale violet. The nest of this form seems to have only previously been found near Elisabethville (Vincent, *Ibis*, 1947: 189).

Psalidoprocne albiceps Sclater.

Vernon opened up a nesting tunnel, extending into a small prospector's pit-wall for about 18 inches, in *Brachystegia* woodland at Kasama on 3rd January, 1959. It contained a single fresh egg, on a pad of lichen and grass, on top of what was apparently a previous year's nest. Building was also seen at another similar site on 29th November, 1958.

Corvus albicollis Latham.

Tree found a single well developed nestling, on a ledge on a limestone cliff, on the Zambesi scarp at 15° 41' S., 28° 31' E., on 24th October, 1960. It was not yet able to fly at all, and the shoulders were still in down.

Onychognathus morio morio (Linné).

Coll. C/3 heavily incubated, 10th December, 1959, from a cliff-face at Msoro, Fort Jameson District, at 13° 36' S., 31° 54' E. (V. J. Wilson).

Mitchell saw two young only just fledged, being fed by their parents, in the gorges adjacent to the Victoria Falls, on 3rd May, 1959.

Nectarinia verticalis viridisplendens (Reichenow).

Mrs. Tait reports seeing a fledgling, still with a marked yellow gape-wattle, being fed by its parents at Old Fife on 6th April, 1960.

Nectarinia olivacea lowei (Vincent).

Coll. C/2 heavily incubated, with female parent, 26th October, 1960, Samfya (C. W. B.). One egg was lost. The other, which is badly broken and impossible to measure accurately, is smooth, with slight gloss, pale brown, heavily marked with sepia clouding, with a zone of darker spots around the top of the large end, above a broad brown zone. The nest was in a patch of evergreen forest, six feet above the ground.

Pytilia afra (Gmelin).

Coll. C/5 heavily incubated, with male parent, 2nd March, 1960, Chilanga (C. W. B.). One egg is larger than the other four, and was rather more fresh. It measures 18.1 x 13.8 mm., and is attributed to *Vidua paradisea*.

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